

**METHOD FOR BIASING MAGNETORESISTIVE SENSOR WITH DECOUPLED  
HARD BIAS MULTILAYERS**

**ABSTRACT**

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A magnetic sensor is provided, having two bias layers separated by a decoupling layer to eliminate exchange coupling between the bias layers. The two bias layers may have differing coercivities, such that the biases provided  
10 by the bias layers to the free layer are independently adjustable. The grain structures of the two bias layers may be substantially decorrelated by the decoupling layer.